

REMARKS

Claims 1-20 are pending herein. By the Office Action, claims 1-19 are rejected under 35 U.S.C. §112, and claims 1-4, 6-10 and 12-17 are rejected under 35 U.S.C. §102(b) and/or §103(a). By this Amendment, claim 1 is amended and new claim 20 is added. Support for new claim 20 can be found in the specification as filed, for example, at page 10, lines 8-24. No new matter is added.

I. Rejection Under 35 U.S.C. §112

Claims 1-19 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Office Action argues that the terms "coating disbondment" and "coating disbondment geometry" are unclear. Applicants respectfully traverse this rejection.

Claim 1, as amended, recites a coupon for monitoring cathodic protection, comprising: a metallic coupon structure comprising a substrate and a corrosion protective coating over at least a portion of the substrate, and at least one type of coating disbondment geometry anticipated on a pipeline fabricated on the outer surface of the metallic coupon structure between the substrate and the corrosion protective coating. Claim 20 is added to further define the coating disbondment geometry as being fabricated by varying at least one of a length of the coating covering the metallic substrate, a gap between the coating and the metallic substrate, an area of exposed metal, and a shape of a coated area covering the metallic substrate.

The Office Action argues that "coating disbondment" and "coating disbondment geometry" are unclear, because it is not clear where the disbondment is located, what is disbonded, and whether the disbondment is of a substrate that is fully coated or partially bare. In response, Applicants respectfully submit that the terms "coating disbondment" and "coating disbondment geometry" are well known in the art, and are not indefinite. As known in the art, a coating disbondment is a coating defect where the coating, such as a corrosion

resistant coating, remains intact but a gap is formed between it and the bare steel substrate located beneath the coating. See specification at paragraph [0011]. One of ordinary skill in the art knows and would recognize that the terms refer to the area between the metal substrate (e.g., the steel pipe) and the protective coating, which has become physically separated from the substrate. Coating disbondment geometry can be defined by a number of parameters, but the most important parameters are the gap between the coating and the metallic substrate, the length of the area where the coating is separated from the metallic substrate and into which the corrosive fluid can collect, and the shape of the disbonded region (rectangular, circular, spiral, etc.). The various shapes of the disbondments are illustrated in Figures 1a through 1c. The gap between the protective coating and the substrate can be simulated by a machined recess as mentioned on p.9, line 31.

The portions of the specification and claims pointed to by the Office Action are consistent with these understood meanings of the terms. The passages at page 10, which describe an embodiment of the invention, describe that a disbondment can be formed in the coupon to simulate various coating defects,. The specification describes that the disbondment can be fully covered (i.e., there is no gap or holiday in the coating that would result in direct exposure of the substrate) or a portion of the disbondment area can be exposed (i.e., to simulate the presence of a holiday or gap in the coating, which would result in direct exposure of the substrate). These descriptions of the embodiment are not unclear, and do not render the claimed invention indefinite.

For at least these reasons, claims 1-19 are clear, and satisfy the requirements of 35 U.S.C. §112, second paragraph. Reconsideration and withdrawal of the rejection are respectfully requested.

II. Rejection Under 35 U.S.C. §102/§103

Claims 1-4, 6-10 and 12-17 are rejected under 35 U.S.C. §102(b), or alternatively under §103(a), over Reiber. Applicants respectfully traverse these rejections.

Claim 1 is directed to a coupon for monitoring cathodic protection, comprising: a metallic coupon structure comprising a substrate and a corrosion protective coating over at least a portion of the substrate, and at least one type of coating disbondment geometry anticipated on a pipeline fabricated on the outer surface of the metallic coupon structure between the substrate and the corrosion protective coating. Claims 2-4, 6-10 and 12-17 depend directly or indirectly from claim 1. Such a cathodic protection monitoring coupon is not disclosed, taught or suggested by Reiber.

Reiber is directed to an improved gasket and coupon for use with a corrosion measurement system. The coupon according to Reiber includes a first material, copper, a portion of which is coated with a second material, lead/tin, such that a galvanic cell is formed. Preferably, the lead/tin coating is placed on the interior and exterior of the upper or lower half of the coupon, the other half of the galvanic cell of the coupon remains uncoated copper. Reiber describes that as a result, a galvanic cell more representative of the soldered pipe joint is formed allowing for more precise corrosion test results to be obtained. See Reiber at Abstract.

First, Reiber does not disclose, teach or suggest a metallic coupon structure comprising a substrate and a corrosion protective coating over at least a portion of the substrate, as claimed. In the coupon of Reiber, the coupon is a copper coupon coated with tin/lead solder to form a galvanic cell. The tin/lead solder of Reiber is not a corrosion protective coating as that term is known and used in the art. In the cited passage at col. 4, lines 12-20, Reiber teaches that rather than being a corrosion protective coating, the tin/lead solder of Reiber "replicate[s] the electrochemical galvanic action occurring at the joints of

solder sweated pipes" and that "[t]he contact of the two dissimilar metals creates a galvanic cell that accelerates the corrosion process and increases the lead release rate on the solder surface." Reiber then describes that the galvanic coupon "is the most effective means of replicating the impact of corrosion on solder sweated joints, which is of particular importance because of the potential for substantial lead release into household plumbing systems." Nowhere does Reiber disclose, teach or suggest that the tin/lead solder is itself a corrosion protective coating, or that it could or should be replaced by such a corrosion protective coating for any purpose whatsoever. In fact, replacing the tin/lead layer of Reiber with a corrosion protective coating would appear to destroy the very heart of the Reiber invention.

Second, Reiber does not disclose, teach or suggest that at least one type of coating disbondment geometry anticipated on a pipeline is fabricated on the outer surface of the metallic coupon structure. In the coupon of Reiber, there is not a coating disbondment geometry. This is true firstly because Reiber does not teach a corrosion protective coating, as described above, and secondly because Reiber does not teach the creation of such a disbondment. Even if the tin/lead solder of Reiber was considered a corrosion protective coating -- which it is not -- Reiber nowhere teaches or suggests that a disbondment should be purposefully created between the copper and the solder layer. Reiber does not address problems or solutions to disbondments, and is entirely silent as to disbondments. Accordingly, Reiber does not teach or suggest this additional limitation of claim 1.

Third, Reiber does not disclose, teach or suggest that the coating disbondment geometry is fabricated between the substrate and the corrosion protective coating. Just as Reiber does not teach or suggest a coating disbondment geometry fabricated in the coupon, Reiber does not teach or suggest that the disbondment should be formed between the substrate and the corrosion protective coating. The purpose of Reiber is to form a galvanic cell; however, Reiber does not teach or suggest that the galvanic cell would be effective if

contact between the respective components is lost in the form of a disbondment.

Accordingly, Reiber arguably teaches away from this feature of the claimed invention.

Accordingly, Reiber fails to disclose, teach or suggest each and every limitation of the claimed invention. Reiber and the claimed invention are directed to two entirely different coupons, and Reiber does not anticipate and would not have rendered obvious the claimed invention to one of ordinary skill in the art.

For all of these reasons, Applicants submit that the claimed invention is patentable over the cited reference. Reconsideration and withdrawal of the rejection is respectfully requested.

III. Conclusion

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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